

(No Model.)

E. MURPHY.

TENSION DEVICE FOR SEWING MACHINES.

No. 324,579.

Patented Aug. 18, 1885.

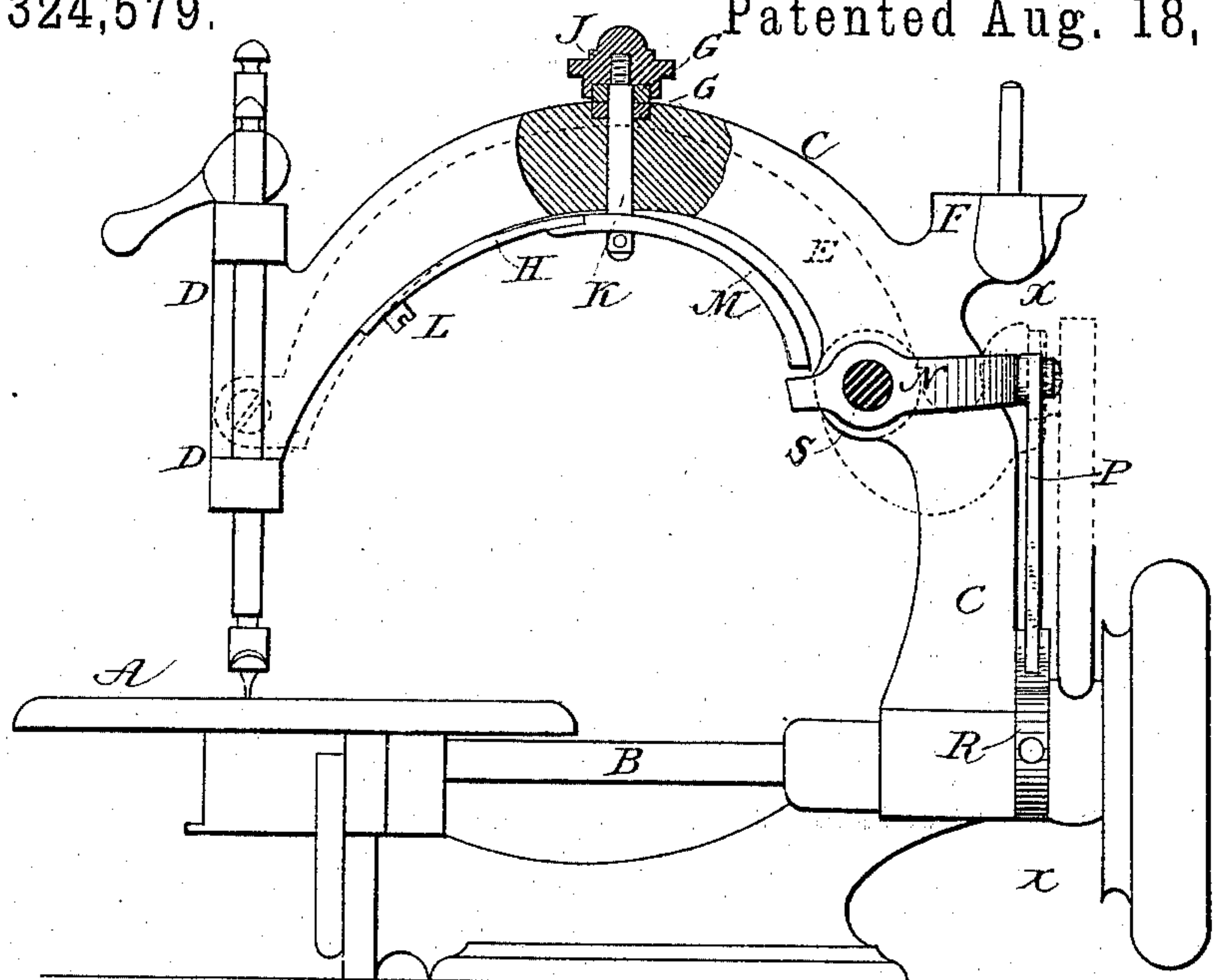


Fig. 1

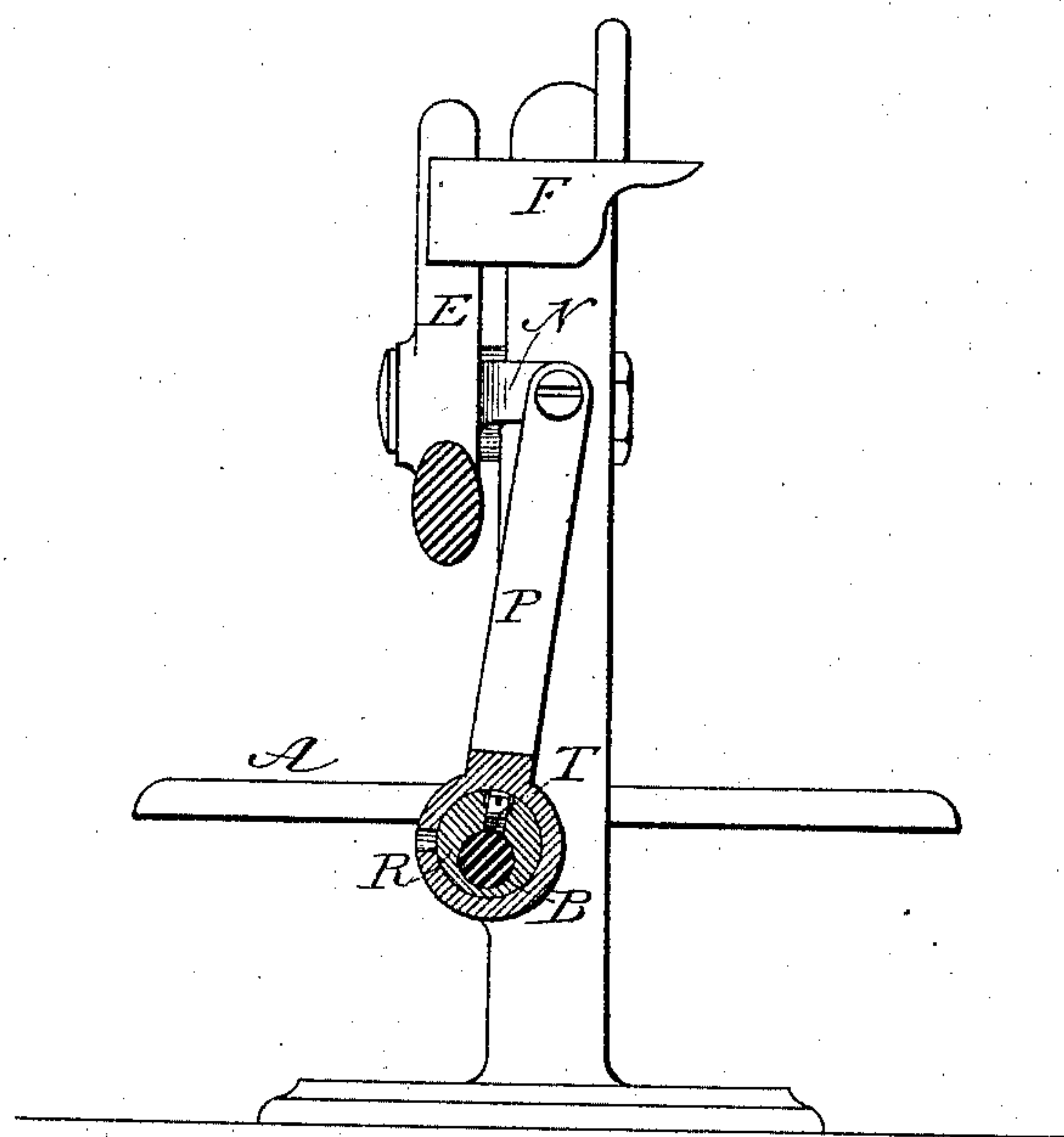


Fig. 2

Witnesses:-
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UNITED STATES PATENT OFFICE.

EDWARD MURPHY, OF NEW YORK, N. Y.

TENSION DEVICE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 324,579, dated August 18, 1885.

Application filed September 24, 1884. (No model.)

To all whom it may concern:

Be it known that I, EDWARD MURPHY, of the city, county, and State of New York, have invented a new and useful Improvement in Tension Devices for Sewing-Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

This invention relates to that class of tension devices for sewing-machines in which the clamping-disks are placed upon the goose-neck of the machine in position to be actuated by a spring fitted upon the under side of the goose-neck and operated by the oscillation of the needle-arm.

In practical use it becomes necessary to provide for a nice adjustment of the movement of the spring, in order to time the tension of the disks upon the thread and their release in exact accord with the drawing up of the thread into the cloth; and the object of my present invention is to obtain this nicety of adjustment in connection with a tension device of the class above named, and more particularly with the device described in the Letters Patent granted to me December 18, 1883, No. 290,345.

It consists in the combination, with the curved spring actuating the tension-disks, of an oscillating lever pivoted upon the pivotal stud upon which the needle-arm vibrates, to move independently of said arm, the inner end or arm of the lever being made, as it rises, to lift the free end of the spring. This lever is coupled at its outer end by a connecting-rod with an eccentric secured on the main shaft of the machine, and which admits of adjustment thereon in the customary manner.

In the accompanying drawings, Figure 1 is an elevation of a sewing-machine with the tension-disks and the pivotal stud of the needle-arm in section, the needle-arm being removed and its position illustrated by dotted lines. Fig. 2 is a transverse section in line *xx* of Fig. 1, the needle arm being broken at its lowest bend.

A is the cloth-plate; B, the main shaft; C, the goose-neck or fixed arm of the frame; D,

the head; E, (in dotted lines,) the needle-arm; F, the spool-stand, and G G the tension-disks of the machine.

The tension-disks G G are arranged upon the upper side of the fixed arm C in substantially the manner described in my Letters Patent No. 290,345, of 1883, the lower disk being fitted in a recess in the upper side of the fixed arm of the frame, while the upper disk is made to rest upon the lower disk, and is adapted to be borne down thereon by the tension of a curved spring, H, fitted upon the under side of the fixed arm C, and connected to a cap-plate, J, resting upon the upper disk by means of a rod, K, passing through a central aperture in the disks and in the arm C. One end of the spring H is secured to the arm C at a point intermediate the rod K and the head D by means of a rivet or screw, L, and its free end extends nearly to the pivotal axis S of the needle-arm E.

Instead of extending the curved spring or spring-plate H to a point opposite the pivotal axis of the needle-arm, the spring may be shortened and a rigid arm or strip, M, be attached to its free end to extend to the pivotal axis, as illustrated in Fig. 1 of the drawings.

Upon the stud-pin S, which constitutes the pivot of the needle-arm E, and between said arm and the bearing for the stud in the frame C, a lever, N, is pivoted, so that its inner shorter arm shall oscillate under the end of the spring or spring-plate M, to come into contact therewith at the end of its upward stroke and thereby lift the bar and spring. The outer end of this lever N is bent to pass around to the rear of the frame C, and is coupled by means of a connecting-rod, P, to an eccentric, R, on the main shaft. This eccentric is adjustable on the shaft, and when properly adjusted is fixed by means of a set-screw, T, in the customary manner. By means of this adjustment the throw of the oscillating lever N may be regulated so as to cause it to lift the spring H at any desired moment in the movement of the needle-arm, so that the tension of the spring upon the disks G G, and consequently their clamping action on the thread, may be automatically set free at the moment the stitch has been properly formed.

and drawn up in the cloth, without regard to the thickness or character of the fabric.

I claim as my invention—

The combination, with the spring H, fitted
5 under the fixed arm C of a sewing-machine,
and adapted to actuate a tension disk or disks,
G, supported upon said arm, of a lever, N,
pivoted upon the pivotal stud of the needle-
arm E of the machine, and connected by a
10 coupling-bar, P, with an adjustable eccentric,

R, upon the main shaft, substantially in the manner and for the purpose herein set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD MURPHY.

Witnesses:

G. H. SPENCER,
J. F. ACKER, Jr.